## REMARKS

Claims 53 – 67 were previously pending in this application, with claims 64 – 66 withdrawn from consideration. By this amendment, claims 57 and 58 have been amended. No claims have been canceled or added. As a result claims 53 – 63 and 67 remain pending, with claims 64 – 66 withdrawn. Claims 53, 57 and 67 are pending independent claims.

Support for the amendment to claim 57 is found, for example, in the application as filed on pages 15 and 16 where a local data structure (e.g., local directory) is populated with alias information (e.g., alias addresses and VLAN mappings) about a locally attached end system identifier (e.g., end stations attached to each switch), as well as Figures 2, 3A, and 3B. Claim 58 has been amended to correct a clerical error (i.e., the ~~said~~ virtual data structure). No new matter has been added.

Rejections Under 35 U.S.C. §102

The Office Action rejected claims 53 – 58, 60 – 63 and 67 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,394,402 to Ross ("Ross"). Applicant respectfully traverses this rejection and submits the following with respect to Ross.

Ross is directed to a hub for establishing a segmented Virtual Local Area Network (VLAN) within a larger Local Area Network (LAN) using a shared transmission media to form a backbone network. (Column 2, lines 46 – 50.) The hubs are connected to one another via a backbone network, and the hubs include internal ports connected to end stations and external ports connected to the backbone network. (Figure 3; column 6, lines 56 – 67.)

In Ross, each hub assigns one or more VLAN designations to each internal and external port. Ross states that the "hub further includes… a local memory for storing VLAN designations for internal ports 12, 14, and 16… and VLAN designations, when desired, for external port 18." (Column 5, lines 14 – 24.) The hub of Ross includes a flow processing element used for "associating a stored VLAN designation with each message transmitted from any of internal ports 12, 14, and 16 to which that stored VLAN designation has been assigned." (Column 6, lines 10 – 14.) Ross discloses that "every time a message is received by a hub on an internal port, the VLAN designation of that port is then associated with the message." (Column 8, lines 35 – 37.) Thus, in Ross, it is the VLAN designation of ports that are associated with each message. (Column 8, lines 35 – 37.)

After associating VLAN designations of a port with a message, Ross discloses that "[a] message may then only be delivered (1) to an end station that is connected to an internal port having a matching VLAN designation, (2) to an internal port that has a matching VLAN designation, or (3) to an external port connected to a hub having a port with a matching VLAN designation." (Column 8, lines 11 – 18.) The message transmissions in Ross are based on VLAN designations of the ports.

Ross continues, stating that "[a]lso stored in [hub memory], and associated with each of the internal ports may be the unique MAC address of all of the end stations that are attached to each particular internal port. These are stored so that when the [flow processing element of the hub] accesses [hub memory] using the unique MAC address, [the hub memory] returns the number of the internal port and the VLAN designation associated with it." (Column 9, lines 28 – 35.) The remainder of this passage states that the VLAN designation is based upon the VLAN designation associated with the port. As Ross states, "[i]n operation, when a message is received from an internal port, the [flow processing element of the hub] accesses the [hub memory] to associate a VLAN designation with the message based on the internal port from whence it came." (Column 9, lines 44 – 47.)

The VLAN designation appended to messages in Ross is based on the VLAN designation of a port. As indicated above, Ross explicitly states that "every time" a message is received by a hub on an internal port, the VLAN designation of that port is associated with the message. (Column 8, lines 35 – 37.) The association is accomplished, according to Ross, by the flow processing element of the hub, which looks up the VLAN designation in the respective memory "based on the number of the internal port where the message originated." (Column 8, lines 37 – 42.)

Independent claim 53 recites:

> A method to provide information of a system in a network, the method comprising the steps of: creating a local data structure in a network device with an attached end system; and populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device.

Applicant respectfully submits that Ross does not anticipate claim 53 because Ross does not disclose all of the elements of claim 53.

First, Ross does not disclose "populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device" as recited in claim 53. The Examiner cites Ross at Figure 2, reference identifier 62, and from column 5 line 62 to column 6, line 3 as disclosing this element. Applicant respectfully disagrees. Ross discloses associating VLAN designations with ports and storing the VLAN designations in memory, as well as determining the MAC addresses of end stations and storing the MAC addresses in memory. In particular, Ross discloses "associating VLAN designations with any or all of internal ports 12, 14, and 16 and external port 18 and storing the assigned VLAN designations in memory 42. Another function takes the form of means (MAC ADDR) 62 for determining the MAC addresses of each of end stations... and storing those MAC addresses in memory 42." (Column 5, lines 58 – 66.) Further, Ross states that "[m]eans 62 may also include the ability to store in memory 42 MAC addresses of any of internal ports 12, 14, and 16 and MAC addresses of internal ports and/or end stations..." (Column 5, line 67 to column 6, line 2.)

Ross does not populate a local data structure "with alias information about a locally attached end system identifier" as recited in claim 53. The MAC addresses of Ross are not "alias information" as recited in claim 53. Ross forecloses the possibility that a MAC address can be the "alias information about a locally attached end system identifier" as recited in claim 53. Ross states: "MAC addresses are unique designations assigned during the manufacture of MAC semiconductor chips for subsequent identification purposes. By industry convention, no two MAC chips are ever assigned the same MAC address designation, even if made by different manufacturers. In hub 10, each of end stations 20, 22, 24, 26, 28, 30, 32, 34, and 36 is provided with a different MAC chip and thus receives its own distinctive and unique MAC address." (Column 5, lines 35 – 43.)

Storing MAC addresses of end stations in hub memory, where each MAC address corresponds to an end station, is different from "populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device" as recited in claim 53. Ross states that by industry convention, end stations in Ross come with MAC addresses that are given to hardware devices during manufacture. The MAC addresses of Ross do not have "alias information about a locally attached end system identifier" as recited in claim 53, or about anything else. Ross stores in memory MAC addresses that identify end stations of Ross. Ross does not store any "alias information" as recited in claim

53. The MAC addresses of Ross do not disclose or suggest "alias information" about "a locally attached end system identifier... of said network device," as recited in claim 53.

Ross discloses that "each end station… has a unique address determined by its own MAC address chip." (Column 7, lines 25 – 27.) Ross further states that "stored in [hub memory] and associated with each of the internal ports may be the unique MAC addresses of all of the end stations that are attached to each particular internal port. These are stored so that when the [flow processing element of the hub] accesses [hub memory] using the unique MAC address, [hub memory] returns the number of the internal port and the VLAN designation associated with it." (Column 9, lines 29 – 35.)

The hub in Ross stores unique MAC addresses that are determined by a MAC address chip included in each end station. (Abstract; column 7, lines 25 – 27.) There is nothing in Ross that includes "alias information" that is "about a locally attached end system identifier" as recited in claim 53. Ross does not disclose any "alias information" associated with the end station MAC addresses of Ross. Ross discloses that each end station simply comes equipped with a unique MAC address. (Column 9, line 30.)

Second, the VLAN designations of Ross also do not disclose "populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device" as recited in claim 53. Ross discloses "associating VLAN designations with any or all of internal ports 12, 14, and 16 and external port 18 and storing the assigned VLAN designations in memory 42." (Column 5, lines 58 – 61.) A VLAN designation stored in memory and associated with internal and external ports is different than "populating said local data structure with alias information about a locally attached end system identifier" as recited in claim 53. A VLAN designation of a port is not "alias information about a locally attached end system identifier" as recited in claim 53. The ports of Ross are not the end stations of Ross, and VLAN designations of the ports of Ross designate the VLAN to which a particular port belongs. (Please see Figure 1 of Ross.) These VLAN designations of Ross do not disclose any "alias information about a locally attached end system identifier" as recited in claim 53. Ross neither discloses nor suggests storing anything other than MAC addresses of the end stations of Ross. The MAC addresses of Ross uniquely identify hardware, and do not have any alias information about that hardware or about anything else. Hence, Ross does not disclose

"populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device" as recited in claim 53.

Thus, neither the VLAN designations of Ross nor the MAC addresses of Ross disclose "alias information about a locally attached end system identifier... of said network device" as recited in claim 53. The VLAN designations of Ross designate ports, and a port is not "a locally attached end system" as recited in claim 53. The end stations of Ross are assigned MAC addresses that uniquely identify individual end stations. Ross discloses no "alias information" about these MAC addresses.

MPEP 2131 instructs that for a reference to anticipate a claim under 35 U.S.C. §102, the reference must teach every element of the claim. In order to meet this exacting standard, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. Because Ross does not disclose "populating said local data structure with alias information about a locally attached end system identifier and a source port identifier of said network device" as recited in claim 53, Applicant respectfully submits claim 53 is allowable for at least this reason and requests withdrawal of the rejection of independent claim 53 and dependent claims 54 – 56 that depend from claim 53.

Independent claim 57 recites:

> A method to provide a virtual data structure of a system in a network, the method comprising the steps of: creating a data structure in a network device with an attached end system; populating said data structure with alias information about a locally attached end system identifier; and reading data from two or more data structures in a network.

Applicant respectfully submits that Ross does not anticipate claim 57 because Ross does not disclose all of the elements of claim 57.

Ross does not disclose "populating said data structure with alias information about a locally attached end system identifier" as recited in claim 57. With respect to the above discussion regarding claim 53, neither the VLAN designations of Ross nor the MAC addresses of Ross disclose "alias information about a locally attached end system identifier" as recited in claim 57. The VLAN designations of Ross designate ports, and a port is not "a locally attached end system" as recited in claim 57. The end stations of Ross are assigned MAC addresses that

uniquely identify individual end stations. Ross discloses no "alias information" about these MAC addresses.

Because Ross does not disclose the above recited claim element of claim 57, Applicant respectfully submits claim 57 is allowable for at least this reason and requests withdrawal of the rejection of independent claim 57 and dependent claims 58 – 63 that depend from claim 57.

Independent claim 67 recites:

> A network device comprising, a port to receive network traffic; and a data processing mechanism configured to create a local data structure that includes at least alias information about a locally attached end system identifier and a source port identifier of said network device.

Applicant respectfully submits that Ross does not anticipate claim 67 because Ross does not disclose all of the elements of claim 67.

Ross does not disclose "alias information about a locally attached end system identifier" as recited in claim 67. With respect to the above discussion regarding claim 53, neither the VLAN designations of Ross nor the MAC addresses of Ross disclose "alias information about a locally attached end system identifier" as recited in claim 67. The VLAN designations of Ross designate ports, and a port is not "a locally attached end system" as recited in claim 67. The end stations of Ross are assigned MAC addresses that uniquely identify individual end stations. Ross discloses no "alias information" about these MAC addresses.

Because Ross does not disclose the above recited element of claim 67, Applicant respectfully submits claim 67 is allowable for at least this reason and requests withdrawal of the rejection of independent claim 67.

## Rejections Under 35 U.S.C. §103

The Office Action rejected claim 59 under 35 U.S.C. §103(a) as being unpatentable over Ross in view of U.S. Patent No. US 5,491,694 to Oliver et al. ("Oliver"). In response, Applicant respectfully traverses this rejection and submits the following with respect to Ross and Oliver.

First, dependent claim 59 depends from independent claim 57 and is allowable for at least the same reasons discussed above with respect to claim 57.

Second, the asserted combination of Ross and Oliver does not disclose or suggest "wherein said virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network" as recited in claim 59. In the Office Action, the Examiner acknowledges that "Ross does not expressly disclose wherein said virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network." (Office Action, page 5.) The Examiner then turns to Oliver and asserts that Oliver discloses the above recited claim element of claim 59. (Office Action, page 5, citing Oliver at column 16, lines 54 – 56.) Applicant respectfully disagrees with this assertion.

Oliver relates to establishing virtual connections through a packet switched data communications system. In particular, Oliver states that "FIG. 7C is a flow chart illustrating what happens from the time a data packet is received on an input port of the switch, until it is sent on the correct output port." (Column 16, lines 22 – 24.) Oliver continues, "[i]n the next step 302, the switch waits for a packet to arrive. In the next step 303, a packet has arrived." (Column 16, lines 28 – 29.) Then, after a packet has been received on the input port of the switch, "the call processor asks the SCS [external directory] to set up a connection between the source MAC and destination MAC. In step 316, the call processor forms an ARP reply packet by putting the destination MAC address inside the packet. In step 317 the call processor sends a reply to the source address... this reply allows the source end system to update its private mapping of the destination IP address to a nonbroadcast MAC address. All subsequent packets to this destination IP address will be properly framed with the source and destination MAC address for which connections will now exist." (Column 16, lines 46 – 56.)

In claim 59, "said virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network." This it not what Oliver discloses or suggests. In Oliver, the source end system uses an ARP reply packet to update its private mapping. The source end system of Oliver is not the "virtual data structure" as recited in claim 59. The ARP reply of Oliver is sent to the source end system. Oliver does not disclose or suggest that the "virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network" as recited in claim 59. Instead, an ARP reply message allows a source end system of Oliver to update its private mapping. With respect to claim 57, from which claim 59 depends, the "virtual data structure" is "a virtual data structure of a system in a network." The source end system of Oliver is not "a virtual data structure of a system in a

network." Accordingly, the ARP reply sent to the source end station of Oliver to update its private mapping does not disclose or suggest "wherein said virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network" as recited in claim 59. Private mapping at a source end station does not disclose or suggest use of "said virtual data structure... to establish an association of a MAC address to an IP address for a system in the network" as recited in claim 59.

Neither Ross, as acknowledged by the Examiner, nor Oliver, as pointed out above, disclose "wherein said virtual data structure is used to establish an association of a MAC address to an IP address for a system in the network" as recited in claim 59. MPEP 2143.03 instructs that all limitations of a claim must be considered and given weight. The above recited claim element is entirely absent from Ross and Oliver. Accordingly, Applicant respectfully requests withdrawal of this rejection and submits that claim 59 is allowable.

## CONCLUSION

In view of the foregoing amendments and remarks, reconsideration is respectfully requested. This application should now be in condition for allowance; a notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762, Ref. E2003-701430.

Respectfully submitted,
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